CLAIMS

1. An anode for a secondary battery comprising:

an anode active material layer which absorbs and discharge lithium ions;

wherein said anode active material layer includes:

a first layer, of which a chief ingredient is carbon, and

a second layer,

said second layer includes:

at least one first element which has a theoretical capacity larger than that of graphite, and

at least one second element which has a theoretical capacity equal to or less than the theoretical capacity of graphite.

2. The anode for the secondary battery according to claim 1, wherein said second layer includes particles, and

said particles have said first element and said second element.

3. The anode for the secondary battery according to claim 2, wherein surfaces of said particles having said first element are coated with said second element.

4. The anode for the secondary battery according to claim 2, wherein surfaces of said particles having said second element are coated with said first element.

5. The anode for the secondary battery according to claim 2, wherein said particles are formed by any of a CVD method, a deposition method, a sputtering method, a mechanical milling method and a mechanical alloy method.

6. The anode for the secondary battery according to any one of claims 1 to 5, said first element is at least one element selected from a group consisting of Si, Ge, Sn, Al, Pb, Pd, Ag, In and Cd.

7. The anode for the secondary battery according to any one of claims 1 to 6, said second element is at least one element selected from a group consisting of C, Fe and Cu.

8. The anode for the secondary battery according to any one of claims 1 to 7, further comprising:

a layer composed of Li or Li compound.

9. The anode for the secondary battery according to claim 8, wherein said Li compound includes LiF or Li_2O.

10. The anode for the secondary battery according to claim 8 or 9, further comprising:

a layer having a lithium ion conductive property.

11. The anode for the secondary battery according to claim 10, wherein said layer having the lithium ion conductive property is formed between said first layer and said layer composed of Li or Li compound.

12. The anode for the secondary battery according to claim 10 or 11, wherein said layer having the lithium ion conductve property is composed of a material selected from a group consisting of Si, Sn, DLC, Li_2O-SiO_2 based compound, $Li_2O-B_2O_3-SiO_2$ based compound, $Li_2O-B_2O_3-P_2O_5$ based compound, Li_2O-WO_3 based compound, $Li_2O-P_2O_5-SiO_2$ based compound and $Li_2O-B_2O_3$ based compound.

13. The anode for the secondary battery according to any one of claims 1 to 12, wherein a volume A of said first element and a volume B of said second element satisfy $0.001 \leq B/(A+B) \leq 0.5$.

14. The anode for the secondary battery according to any one of claims 1 to 13, further comprising:

a collector,

wherein said collector is placed adjacently to said first layer.

15. The anode for the secondary battery according to any one of claims 1 to 13, further comprising:

a collector,

wherein said collector is placed adjacently to said second layer.

16. A secondary battery comprising:

an anode for a secondary battery according to any one of claims 1 to 15;

a cathode which absorb and discharge lithium ions; and

an electrolyte which is placed between said anode for the secondary battery and said cathode.